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UDC: 778.4

KOTOSONOV, N. V., KHLYAVICH, Ya. L., KOLESNIKOV, A. I., BAZARSKIY, O. V., DUSHKIN, I. R., and VISLYANSKIY, A. G.

"Recording and Restoring Microwave Holograms With Gradations of the Interference Picture"

Moscow, Radiotekhnika i elektronika, No 8, 1972, pp 1731-1732

Abstract: The purpose of this brief communication is to compare the quality of images restored from binary and multigradation radioholograms in the optical range. A block diagram of the hologram recording equipment used for the experiments described in this paper is shown, and a description of its operation given. The radiation source used was a type OV-22 backward wave tube, with a frequency of 125 GHz. The method of processing the obtained recordings is described. For restoration, the hologram was photographically reduced and was then restored in the diverging beam of a helium-neon laser type LG-36A. Photographs of the object, its image restored by multigradation hologramming, and the image restored by binary hologramming, are reproduced for comparison. The experiment showed that while the resolving capability of binary and multigradation holography are the same,

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KOTOSCNOV, N. V., et al, Radiotekhnika i elektronika, No 8, 1972, pp 1731-1732

the quality of the restored image is better with the latter method.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

VISSARIONOVA, V. Ya.

JPRS 55569
29 May 72

UDC: 613.2:[615.355:664

HYGIENIC INVESTIGATION OF ENZYME PREPARATIONS USED IN THE FOOD INDUSTRY

[Article by A.N. Ivanitskiy, B.K. Sklyar, V.Ya. Vissarionova, Institute of Nutrition, USSR Academy of Medical Sciences, Moscow; Vestnik Akademii Meditsinskikh Nauk SSSR, Russian, No 2, 1972, pp 15-22]

Hygienic investigation and control of the use of enzyme preparations of bacterial origin for use as additives to foods is a complex problem with national economic significance. The advances in modern enzymology and microbiology, their practical use in the food industry, are related to elaboration of technological procedures for producing enzyme preparations varying in degree of purification. At the present time it is generally conceded that it is the most purposeful to recommend preparations obtained from acid fungi and bacteria for use as hydrolytic enzymes and complexes thereof in the food industry.

In the directives of the 24th Congress of the CPSU pertaining to the Ninth Five-Year Plan of development of the national economy, attention is given to future growth of production of enzyme preparations, and to the need to broaden the assortment thereof considerably. The production of enzyme preparations obtained from fungi and bacteria is one of the main branches of modern microbiological industry. Hygienic investigation of enzyme preparations is an important area of hygiene of nutrition and prevention of alimentary disease. The results of investigating the possibility of making practical use of enzyme preparations from the standpoint of preventive medicine permit development of the appropriate recommendations to public health agencies with regard to the desirability of allowing (or banning) their use in the food industry.

With regard to the economic effect of broader use of enzymes, we could cite here the pronouncement of A.S. Tsyperovich, that this effect could amount to billions of rubles in our country. It must be noted that even more attention has been paid to this problem in recent times. In 1970, the comprehensive monograph by V.L. Yarovenko et al. was published, Proizvodstvo fermentnykh preparatov iz Gribov i Bakteriy (Production of Enzyme Preparations out of Fungi and Bacteria), and it summarized the problems related to development and present status of this problem. The Main Administration for the Microbiological Industry under the USSR Council of Ministers has published special surveys

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UNCLASSIFIED PROCESSING DATE--17JUL70

TITLE--BIOLOGICAL ACTION OF FLUORESCENT SUBSTANCES ISOLATED FROM THE MOLD ASPERGILLUS NIGER -U-

AUTHOR--SKIRKO, B.K., NESTERIN, M.F., VISSARIONOVA, V.YA.

COUNTRY OF INFO--USSR

SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 69, NR 2, PP 44-46

DATE PUBLISHED-------70

2 5 31

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--FLUORESCENCE, CHROMATOGRAPHY, ASPERGILLUS, ENZYME ACTIVITY, FOOD INDUSTRY, LIVER, BILE, FOOD INDUSTRY, WHITE RAT, PROTEIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1982/0406 STEP NO--UR/0219/70/069/002/0044/0046

CIRC ACCESSION NO--AP0051923

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

Acc. Nr: AP0051923 Ref. Code: UR0219

PRIMARY SOURCE: Byulleten' Eksperimental'noy Biologii i Meditsiny, 1970, Vol 69, Nr 2, pp 44-46

BIOLOGICAL ACTION OF FLUORESCENT SUBSTANCES ISOLATED FROM THE MOLD *ASPERGILLUS NIGER*

B. K. Skirko, M. F. Nesterin, V. Ya. Vissarionova

Institute of Nutrition, Academy of Medical Sciences of the USSR, Moscow

Extraction and preparative chromatography was used to isolate fluorescent substances from the mold *Aspergillus niger*. Experiments on albino rats testified to their toxic hepatotropic action: when given orally, they induce protein dystrophy of the liver parenchyma and proliferation of the bile ducts epithelium. If the mold *Aspergillus niger* is used as a sourse for enzyme preparations to be used in food industry, the preparation must be washed of fluorescent contaminants.

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USSR

UDC 622.215.2

BARANAYEV, M. K., VITELIS, V. M., and SHUMOV, K. M. (Moscow)

"Influence of the Shell Upon the Initial Parameters of an Underwater Explosion of a Cylindrical Explosive Charge"

Moscow, Zhurnal Prikladnoy Mekhaniki i Tekhnicheskoy Fiziki, No 1, 1973, pp 165-169

Abstract: An experimental determination is made of the initial parameters of shock waves in water during the explosion of cylindrical charges of trotyl in shells. It is shown that these parameters depend mainly upon the dynamic rigidity of the material and the relative weight of the shell. It is established that in the process of expansion of the charge shell during an explosion in a limited volume of water, a region of extremely rapid rarefication is formed, the boundary of which may be identified with the boundary between the detonation products and the water after destruction of the shell, which coincides in time with the arrival of the cavitation front. 3 figures. 3 tables. 8 references.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

USSR UDC 911.3:616-02:613.11(470.23)

VITELS', L. A., and RYVKIN, B. A.

"Meteorological-Heliobiological Analysis of the Incidence of Myocardial Infarct"

Tr. Gl. geofiz. observ (Works of the Main Geophysical Observatory), No 258, 1970, pp 142-154 (from RZh-Meditsinskaya Geografiya, No 2, Feb 71, Abstract No 2.36.33 by V. Zhadovskaya)

Translation: Data on the relationship between the frequency of myocardial infarct in Leningrad in 1967-1968 and sun activity and meteorological factors (temperature, atmospheric pressure, among other factors) are presented. A five-day period in which myocardial infarct cases were recorded (28 January-1 February 1968) is discussed. The increase in disease incidence of myocardial infarct against a cyclic activity involving higher atmospheric temperatures and increased solar activity is discussed. It was found that there is a close link between the number of myocardial infarct cases and the position of the basic group of sunspots on the sun and solar radiation at frequencies of 100 and 200 megacycles. A high frequency of myocardial infarct was discovered from the 12th to the 13th day of the 27-day solar calendar. A unique change was observed in 90% of cases for 15 solar rotations.

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Acc. Nr. AP0041503 Abstracting Service: CHEMICAL ABST. 4/70 Ref. Code 4R0366

89919p Reactivity of diphenylcarbene in reactions with olefins. D'yakonov, I. A.; Stroiman, I. M.; Vitenberg, A. G. (Leningrad. Gos. Univ., Leningrad, USSR). *Zh. Org. Khim.* 1970, 6(1), 42-5 (Russ). Ph_2C: has electrophilic character and it also has greater reactivity when it is formed from Ph_2CN_2 by photolysis than when it is formed by catalytic decompn. The reaction of H_2C:CHOBu (I) with Ph_2C: produced by irradn. gave 35.2% 1,1-diphenyl-2-butoxycyclopropane (II), 12% $(Ph_2C:N)_2$, and 14.4% Ph_2CO. In the reaction of I with Ph_2C: produced by heating Cu stearate-$PhCN_2$ complex 16.7% II was obtained. The reaction of 1-heptane with photolytically produced Ph_2C: gave 4.5% 1,1-diphenyl-2-amylcyclopropane, 12% Ph_2CO, and 36.4% $Ph_2CHCHPh_2$. CPJR

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USSR

UDC 615.31:547.333.4].015.11

TRAVUSHKINA, L. F., and VITENBERG, I. G., Leningrad Institute of Chemical Pharmaceutics

"Quaternary Ammonium Salts of Dialkylaminoalkyl Esters of 4-Amino(nitro)-2-chlorobenzoic Acids"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, No 3, 1973, pp 6-8

Abstract: In searching for new cholinesterase inhibitors and myorelaxants, quaternary ammonium salts of dialkylaminoalkyl esters (I) were prepared by treating the corresponding I of 4-amino-2-chlorobenzoic acid or 4-nitro-2-chlorobenzoic acid with alkyl halides in anhydrous alcohol or acetone. Reaction of the chloride form of the acids with the appropriate dialkylamino alcohols led to the formation of I. Thin layer chromatography on aluminum oxide in dichloroethane: ethanol (17.5:2.5) and (16.5:3.5) solvent systems, showed that the R_f values of the I of 4-nitro-2-chlorobenzoic acid were greater than those of the corresponding amino esters due to the greater chromatographic mobility of the NH_2 group in comparison with the NO_2 group. R_f values for the quaternary ammonium salts were dependent on the alkyl residues on N+, as well as on the distance between the ester oxygen and the N+ atom. An amino ester with 3 CH_3 groups on the nitrogen atom showed the greatest biologic activity in frog

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TRAVUSHKINA, L. F. and VITENBERG, I. G., Khimiko-Farmatsevticheskiy Zhurnal, No 3, 1973, pp 6-8

rectus abdominis contraction test, and 2.5 μg/kg administered intravenously to anesthetized cats caused a depolarizing type of block at the neuromuscular junction.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

Computers: Analog

USSR

UDC 681.332

VITENBERG, I. M., Doctor of Technical Sciences, Editor

"Basic Technical and Operational Characteristics of Analog Computers"

Moscow, 304 pp, 1972, "Mashinostroyeniye," p 2

Translation: This book contains information on domestically manufactured electronic analog computers (AC) designed for the solution of systems of ordinary differential equations.

The book presents technical and operational characteristics of the machines and their elements, functional and schematic drawings, and comparative tables. Experience in the design and operation of manufactured AC of various types went into the preparation of these pages.

The book is designed for a broad group of readers, primarily engineering-technical personnel concerned with problems in the operation and servicing of AC. Nineteen tables, 153 illustrations, bibliography of 17 titles.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

USSR UDC: 681.332

VITENBERG, I. M., Doctor of Technical Sciences, Editor

"Basic Technical and Operational Characteristics of Analog Computers"

Moscow, 304 pp, 1972, "Mashinostroyeniye," p 303

Translation:

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Chapter 1. Systems and Devices for Executing Linear Computer Operations. . . . . .

1. Summation and integration of variables; generation of rational transfer functions . . .

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USSR

VITENBERG, I. M., Moscow, 304 pp, 1972, "Mashinostroyeniye," p 303

2. Operational d-c amplifiers. . . . . .

3. Specified constant and variable coefficients. . .

Chapter 2. Systems and Devices for Executing Nonlinear Computer Operations. . . . . .

1. Electromechanical devices for functional transformation and multiplication of variables. .

2. Diode functional converters . . . . . .

3. Devices for multiplication (or division) of variables, using square-law circuits. . . . . .

4. Pulse-time circuits for multiplying variables . .

5. Circuits for generating the characteristics of nonlinear elements typical for automatic control systems . . . . . .

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

USSR

VITENBERG, I. M., Moscow, 304 pp, 1972, "Mashinostroyeniye," p 303

Chapter 3. Servicing Systems . . . . . .

1. Control systems . . . . . .

2. Regulatory systems. . . . . .

3. Data read-in and read-out systems . . . . . .

4. Power supply units and systems. . . . . .

Chapter 4. Fundamental Operational-Technical Characteristics of Analog Computers

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UDC 681.33:681 03.06

VITENBERG, I. M.

Programmirovaniye Analogovykh Vychislitel'nykh Mashin (The Programming of Analog Computers), Moscow, "Mashinostroyeniye," 1972, 408 pp

Translation of Annotation (Reviewers: Doctor of Technical Sciences B. M. KAGAN and Candidate of Technical Sciences A. V. SHILEYKO), p 2, and Table of Contents, pp 406-407: The book deals with questions of procedure for the formulation of various classes of problems, methods, and techniques of preparing problems and equations for their solution on analog computers, and methods and techniques for the on-line use of analog and digital computer equipment.

The book contains general programming definitions, rules, and recommendations which use a brief exposition of the principles whereby analog computer equipment is constructed. The principles of methodology and hardware for expanding the range of problems solvable by analog computer equipment are considered, and programming recommendations are given for the solution of such problems, including partial differential equations, integral equations

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VITENBERG, I. M., Programmirovaniye Analogovykh Vychislitel'nykh Mashin, Moscow, "Mashinostroyeniye," 1972, 408 pp

problems in finding optimal solutions, and systems of finite equations. For specialists engaged in close study of the principal areas for the employment of analog computer equipment, recommendations are given for the construction and study of rational analog computer structures. Four tables, 172 illustrations, bibliography with 64 titles.

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VITENBERG, I. M., Programmirovaniye Analogovykh Vychislitel'nykh Mashin, Moscow, "Mashinostroyeniye," 1972, 408 pp

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VITENBERG, I. M., Programmirovaniye Analogovykh Vychislitel'nykh Mashin, Moscow, "Mashinostroyeniye," 1972, 408 pp

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VITENBERG, I. M., Programmirovaniye Analogovykh Vychislitel'nykh Mashin, Moscow, "Mashinostroyeniye," 1972, 408 pp

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VITENBERG, I. M., Programmirovaniye Analogovykh Vychislitel'nykh Mashin, Moscow, "Mashinostroyeniye," 1972, 408 pp

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

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VITENBERG, I. M.

"Programming of Analog Computers"

Programmirovaniye analogovykh vychislitel'nykh mashin (cf. English above), Moscow, "Mashinostroyeniye", 1972, 408 pp, ill. 1 r. 62 k. (from RZh-Kibernetika, No 5, May 72, Abstract No 5V512 K)

Translation: The book deals with the problems of technique in formulating problems of various classes, with procedures and methods of preparing problems and equations for analog computer solution, and with procedures and methods for combined use of analog and digital computer facilities.

The book contains general definitions, rules and recommendations on programming which utilize a brief exposition of the principles of constructing analog computer facilities. Hardware and software fundamentals are discussed for extending the class of problems which can be solved by analog computer facilities, and recommendations are presented on programming in solution of problems of this type.

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USSR UDC: 624.131.43+539.21.084-492.3

VITENBERG, M. V.

"Influence Which the Characteristics of Deformability and Erection Stage Factor Have on the Stressed and Deformed State of the Cross Section of a Dam With a Core"

Tr. VNII vodosnabzh., kanaliz., gidrotekhn. sooruzh. i inzh. gidrogeol. (Works of the All-Union Scientific Research Institute of Water Supply, Sewage, Hydraulic Structures and Hydrogeological Engineers), 1972, vyp. 34, pp 37-42 (from RZh-Mekhanika, No 7, Jul 72, Abstract No 7V539)

Translation: The method of finite elements is used to solve the plane problem of the stressed and deformed state of the profile of an earth and stone dam with a core. The stressed state is determined with regard to the elastic characteristics (the modulus of deformation E and the Poisson ratio μ) of the three zones of dam materials (clay core, stone faces, and incompressible rock base). A symmetric profile was calculated for a dam 100 m high with a rise for the facing banks of 1:2, and of the core banks -- 1:0.3. The diagrams of displacements and stresses are compared for two design cases: in both instances the modulus of deformation of the core $E_c = 500$ kg·cm^{-2}, and of the facing $E_f = 1000$ kg·cm^{-2},

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VITENBERG, M. V., Tr. VNII vodosnabzh., kanaliz., gidrotekhn. sooruzh. i inzh. gidrogeol., 1972, vyp. 34, pp 37-42

the Poisson ratio μ in the core and facing was taken as $\mu_c = \mu_f = 0.2$ in the first case, and $\mu_c = \mu_f = 0.3$ in the second case. An increase in the Poisson ratio led to a uniform reduction in vertical displacements by approximately 12-15%, and to a considerable increase in horizontal displacements toward the bank. An increase in μ from 0.2 to 0.3 increased the values of σ_x at the base by a factor of more than 1.5, while the curves for σ_y changed insignificantly. On the following stage of the calculations, the first of the two cases ($\mu_c = \mu_f = 0.2$) was compared with the case where $\mu_f = 0.2$, and $\mu_f = 0.4$; the moduli of deformation remained as before. The increase in μ_c led to an appreciable increase in horizontal displacements toward the bank, and considerably reduced vertical displacements in the core and in the touching support faces. A reduction in E_c to 250 kg·cm^{-2} when $E_f = 100$ kg·cm^{-2}, $\mu_c = 0.4$ and $\mu_f = 0.2$ led to an increase in nonuniformity of settling of the core and faces, a change in the diagram of horizontal displacements in the upper part of the cross section, redistribution of stresses σ_y, and an increase in the arching effect. The erection stage factor, which was accounted for by breaking

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VITENBERG, M. V., Tr. VNII vodosnabzh., kanaliz., gidrotekhn. sooruzh. i inzh. gidrogeol., 1972, vyp. 34, pp 37-42

up the cross section of the dam into five layers, led to an increase in settling of the core and a reduction in stresses σ_y by a factor of nearly two as compared with the case of instantaneous erection. Yu. P. Lyapichev.

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1/2 016 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--A STUDY USING CORRELATION FUNCTIONS FOR SURFACE ROUGHNESS AFTER TURNING -U-

AUTHOR--VITENBERG, YU.R.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, STANKI I INSTRUMENT, NO 2, 1970, PP 20-23

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--SURFACE ROUGHNESS, METAL TURNING, BIBLIOGRAPHY, CORRELATION FUNCTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1294 STEP NO--UR/0121/70/000/002/0020/0023

CIRC ACCESSION NO--AP0123253

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2/2 016 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0123253

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IT IS SHOWN THAT THE SELECTIVE ANALYSIS OF THE REGULAR AND RANDOM COMPONENTS OF SURFACE ROUGHNESS AFTER TURNING CONTRIBUTES TO A MORE COMPLETE EXPLANATION OF THE EFFECT OF VARIOUS CUTTING CONDITIONS ON SURFACE CHARACTERISTICS. THIS MAKES IT POSSIBLE TO ESTABLISH THE INTERRELATIONSHIP BETWEEN OPERATIONAL PROPERTIES OF PARTS AND THEIR SURFACE ROUGHNESS.

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

USSR

UDC: 8.74

PRYANITSKIY, A. M., VITENKO, I. V.

"Finite Pattern Recognition Automata"

Probl. bioniki. Resp. mezhved. temat. nauch.-tekhn. sb. (Problems of Bionics. Republic Interdepartmental Thematic Scientific and Technical Collection), 1973, vyp. 10, pp 93-99 (from RZh-Kibernetika, No 7, Jul 73, abstract No 7V698 by the authors)

Translation: Reading machines are considered in which the objects to be recognized are coded by words of the same length. The problem of minimizing the recognition automaton with terminal states is formulated and solved. The feasibility of using finite Moore automata for pattern recognition is studied.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

USSR

UDC 616.12-073.75

YANUSHKEVICHUS, Z. I., VITENSHTEYNAS, G. A., PRANEVICHYUS, A. A., VALUZHIS, K. K., and YUKNELIS, L. V., Chair of Hospital Therapy, Kaunas Medical Institute

"A Method for Continuous Recording of an Amplified EKG"

Moscow, Meditsinskaya Tekhnika, No 5, Sep/Oct 70, pp 54-55

Abstract: A description is given of a method for direct recording of an amplified EKG by means of an electrocardiograph designed at the Kaunas Medical Institute. The amplification is effected by application of the feedback principle. The diagnostic advantages of an amplified EKG were established on the basis of an examination of 400 persons, including those in good health as well as those with hypertension, chronic coronary insufficiency resulting from atherosclerosis, and indistinct heart rhythm. Comparative analysis of conventional and amplified electrocardiograms showed that the new method for recording the EKG permits additional information to be obtained in the diagnosis of a number of heart diseases.

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VITER, N. F.

SO:JPRS 55204
16 FEB 72

UDC: 362.11(049.3)

SOME ISSUES PERTAINING TO RATIONAL USE OF HOSPITAL BEDS IN A RURAL AREA

[Article by N.F. Viter, Shchekrsiy Rayon Central Hospital (chief physician) V.I. Nagornyy, Chernigovskaya Oblast; Moscow, Sovetskoye Zdravookhraneniye, Russian, No 1, 1972, submitted 31 August 1971, pp 25-29]

The article by L.V. Lokshina, L.L. Lunskaya, and M.P. Roytman, "On the Efficiency of Using Hospital Beds," is timely and opportune. Hospitals are an important element in the system of therapeutic and preventive care for the people. In them are concentrated the main material resources, they employ qualified specialists, in most cases seriously ill patients are treated there, doctors and intermediate medical personnel are trained there and improve their qualifications.

According to most authors, only about one-fifth of the patients who go to polyclinics are referred to hospitals (17.3% according to S.Ya. Freydlin, 16.2 according to G.A. Popov). Those hospitalized are mainly patients for whom a complete workup, qualified treatment and care are difficult due to the nature and severity of the disease, as well as social, personal, and other reasons.

The problem of meeting the demands of the people to the utmost degree is being solved both by putting new hospitals in operation, as well as departments, placing them purposefully, and more rational use of the existing bed resources.

L.N. Kibardin observes that there is considerable economic advantage to hospitalization of internal reserves; in his opinion, with the same hospital capability, it is possible to hospitalize more patients, and for this he recommends [illegible] analysis of factors having a direct or indirect effect on quantitative and qualitative indices of hospital activities, and that the necessary steps be taken to improve them. N.G. Kitsis maintains that some of the hospitalized cases could have been successfully treated as outpatients or in their home, and he recommends that in each concrete case strict determination be made of indications for hospitalization, that the quality of polyclinic care be improved, that maximum workups be done on a regularly scheduled basis under

Sovetskoye Zdravookhraneniye, No 7, 1971, p 36.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

USSR

UDC: 621.317.784.023

BALANOV, A. T. and VIDEVSKIY, V. B.

"Computing the Input Current of a Hall Sensor in the Pulse Mode"

V sb. Radioelektron. v nar. kh-ve SSSR. Ch. 2 (Radioelectronics in the National Economy of the USSR, Part 2--collection of works) Kuybyshev, 1970, pp 118-122 (from Rzh-Radiotekhnika, No. 3, March 71, Abstract No. 3A371)

Translation: The use of the Hall sensor in measuring the power in pulses is discussed. The advantages (for increased output signal) of higher input sensor current than the specified value, usually indicated for direct current, is noted. On the basis of two initial conditions -- the permissible temperature of the sensor and the permissible drop in the output signal plateau -- a detailed computation is made, from which the formula for the input current is obtained. Bibliography of three. N. L.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

1/2 020 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--F SUB2 O SUB5 MINUS SB SUB2 O SUB3 R SUBX O SUBY SYSTEMS (R EQUALS CR, V, TI, FE). III. PHOSPHORUS PENTOXIDE AND ANTIMONY SESQUIOXIDE -U-

AUTHOR-(05)-DOMBROVSKAYA, V.K., MILLERS, T., KONSTANTS, Z., VAYVADS, A., VITINA, I.

COUNTRY OF INFO--USSR

SOURCE--LATV. PSR. ZINAT. AKAD. VESTIS, KIM. SER. 1970, (1), 10-14

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--THERMAL EFFECT, CHEMICAL SYNTHESIS, ELECTRICAL CONDUCTIVITY, ANTIMONY COMPOUND, PHOSPHORUS COMPOUND, CHROMIUM COMPOUND, VANADIUM COMPOUND, TITANIUM COMPOUND, IRON COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0610 STEP NO--UR/0464/70/000/001/0010/0014

CIRC ACCESSION NO--AP0105593

UNCLASSIFIED

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2/2 020 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0105593

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NH SUB4 H SUB2 PO SUB4 USED TO PREP. THE SPECIMENS HAD ONLY 1 ENDOTHERMIC EFFECT, AT SIMILAR TO 200DEGREES. AT THIS POINT THE ELEC. COND. INCREASED SHARPLY. ABOVE THIS TEMP. THE PHOSPHATE GRADUALLY DECOMPD. GIVING OFF NH SUB3 AND H SUB2 O. THE ENDOTHERMIC EFFECT AND THE SHARP INCREASE OF COND. WERE THE RESULT OF FUSION. BEYOND THE PEAK A NEW SOLID SUBSTANCE FORMED AND THE ELEC. COND. DROPPED TO ITS ORIGINAL VALUES. THE SB SUB2 O SUB3 UPON HEATING HAD 1 EXOTHERMIC EFFECT, AT 570-580DEGREES, CAUSED BY OXIDN. OF SB SUB2NEGATIVE O SUB3 TO SB SUB2 O SUB4. HEATING A MIXT. OF P SUB2 O SUB5 MINUS SB SUB2 O SUB3 TO 300DEGREES RESULTED IN THE FORMATION OF A COMPD. CORRESPONDING TO SB SUB2 O SUB3 TIMES P SUB2 O SUB5. THIS SUBSTANCE REMAINED CRYST. UP TO 1400DEGREES.

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3

UDC 616.981.553

USSR

GLADKOVSKIY, A. P., LESNIKOV, A. L., MAKAROVA, T. A., PANOVA, K. M., DINER, Z. S., KRUPINA, A. P., and VITEVSKIY, V. S., Leningrad Hospital imeni S. P. Botkin, and Chair of Infectious Diseases, First Leningrad Medical Institute imeni I. P. Pavlov, and Institute of Epidemiology and Microbiology imeni Pasteur

"Clinical Symptoms and Etiology of Botulism"

Moscow, Klinicheskaya Meditsina, Vol 48, No 9, Sep 70, pp 79-83

Abstract: From 1959 to 1967 the authors treated 14 cases of botulism, most of which were caused by eating marinated or salted mushrooms or home-canned fish. The incubation period ranged from 2 hours to 3 days. The disease was incorrectly diagnosed in all but one case, owing to unfamiliarity with the symptoms on the part of the first doctors to see the patients (botulism has for sometime been virtually eradicated in the USSR). The initial symptoms are characteristic and readily detectable. They include a combination of indications of gastrointestinal disorders (vomiting, nausea, constipation, abdominal pains), with symptoms of impaired vision (anisocoria, mydriasis, diplopia, blepharoptosis, nystagmus, etc.), impaired swallowing, speech, and respiration. Prompt injection of antibotulinus serum usually prevents further development of the symptoms and, combined with antibiotics and hormones plus cardiovascular agents, strychnine, physostigmine, and pilocarpine, brings about recovery within about a month.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

USSR

UDC: 681.325.65:525

VITKALOV, B. G., TRUNOV, L. I., PASHOLOK, L. T.

"A Fluidic Discrete Amplifier"

USSR Author's Certificate No 309354, filed 19 May 70, published 13 Aug 71 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 7, Jul 72, Abstract No 7A62 P)

Translation: A fluidic discrete amplifier is proposed which contains supply and control channels, output channels with a splitter between them, and also channels which are open to the atmosphere. To increase the amplification factor the walls of all channels of the amplifier, except for the controlling channels, are sloping and narrowed toward the lower part of the element, while the controlling channels are made shallower and are located in the lower part of the element. One illustration.

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1/2 025 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--SHORT PERIOD PULSATIONS OF THE PULSAR CP 0808 AND BASIC CHARACTERISTICS OF ITS RADIO EMISSION IN THE RANGE OF METER WAVES -U-

AUTHOR-(02)-VITKEVICH, V.V., SHITOV, YU.P.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, DOKLADY AKADEMII NAUK SSSR, VOL 191, NO 3, 1970 PP 553-556

DATE PUBLISHED--------70

SUBJECT AREAS--ATMOSPHERIC SCIENCES, NAVIGATION

TOPIC TAGS--PULSAR, STAR, RADIO EMISSION, RADIO TELESCOPE, PULSATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/1234 STEP NO--UR/0020/70/191/003/0553/0556

CIRC ACCESSION NO--AT0109321

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2/2 025 UNCLASSIFIED

CIRC ACCESSION NO--AT0109321 PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INVESTIGATIONS OF THE RADIO EMISSION OF THE PULSAR CP 0808 WERE MADE ON THE E-W CRUCIFORM RADIO TELESCOPE OF THE PHYSICS INSTITUTE AT PUSHCHINA IN THE RANGE 60-110 MC-SEC. IT WAS FOUND THAT THE IMPULSES OF THE PULSAR CP 0808 IN THE RANGE 110-60 MC-SEC CONSIST OF SEVERAL SUBIMPULSES (1, 2 OR 3) WITH AVERAGE SEPARATION OF 53.6 MSEC. THIS PULSAR IS CHARACTERIZED AS CLASS II (DRAKE CRAFT CLASSIFICATION) WITH A MEAN PERIOD P SUB2 EQUAL 0 PRIMES .053642 PLUS OR MINUS 0 PRIMES .000002. THIS PERIOD IS NOT A MULTIPLE OF THE CLASS I PERIOD (P SUB1 EQUAL 1.292241 EQUAL 24.09 P SUB2) AND THEREFORE THE FOLLOWING PICTURE IS OBSERVED: IN A GROUP CONSISTING OF AN AVERAGE OF 11 IMPULSES THE SUBIMPULSES FOLLOW ONE ANOTHER WITH A MEAN PERIOD P EQUAL 1.2874 EQUAL 24P SUB2; THEN THE SUBIMPULSES OF THIS GROUP GRADUALLY DISAPPEAR AND SUBIMPULSES OF THE NEXT GROUP, DISPLACED BY 53.6 MSEC RELATIVE TO THE FIRST, FORM A NEW SEQUENCE OF IMPULSES; THEN THE PATTERN IS REPEATED. CP 0808 IS THE THIRD PULSAR IN WHICH CLASS II PULSATIONS HAVE BEEN DISCOVERED. USING A MODEL OF A PULSAR AS A PULSATING ROTATING COMPACT STAR, IT IS POSSIBLE TO DETERMINE THE WIDTH AND TO SOME EXTENT THE FORM OF THE RADIO EMISSION DIAGRAMS OF PULSAR SUBIMPULSES. THE MEAN FORM OF THE RADIO EMISSION DIAGRAM CAN BE OBTAINED BY CONSTRUCTING A HISTOGRAM OF THE DISTRIBUTION OF AMPLITUDES OF SUBIMPULSES AS A FUNCTION OF THEIR TEMPORAL POSITION. ANALYSIS OF RESULTS OBTAINED AT FREQUENCIES 62, 96 AND 110 MC-SEC SHOWS THAT THE MEAN FORM OF THE RADI.

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USSR

UDC: 621.793

VITKIN, A. I. and TEYNDL, I. I.

Metal Coatings of Sheet and Strip Steel (Metallicheskiye pokrytiya listovoy i polosovoy stali), Moscow, "Metallurgiya" Press, 1971, 494 p., 173 illustrations, 30 tables, 247 bibliographic references.

The book, a joint effort by Soviet and Czech authors, outlines the fundamentals of the theory and technology of applying metal coatings to sheet steel. Considerable attention is given to the structure of the coating, the phase composition of intermediate layers, corrosion processes as well as the uses of protected rolled stock in the national economy. The book is intended for engineering, technical and scientific personnel engaged in the production and studies of protective coatings (hot, electrolytic, vacuum and others) and may be valuable to students specializing in this field.

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VITKIN, A. I., and TEYNDL, I. I., Metal Coatings of Sheet and Strip Steel, Mosocw, "Metallurgiya" Press, 1971, 494 p., 173 illustrations, 30 tables, 247 bibliographic references.

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VITKIN, A. I., and TEYNDL, I. I., Metal Coatings of Sheet and Strip Steel, Moscow, "Metallurgiya" Press, 1971, 494 p., 173 illustrations, 30 tables, 247 bibliographic references

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VITKIN, A. I., and TEYNDL, I. I., Metal Coatings, of Sheet and Strip Steel, Moscow, "Metallurgiya" Press, 1971, 494 p., 173 illustrations, 30 tables, 247 bibliographic references

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

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VITKIN, A. I., and TEYNDL, I. I., Metal Coatings of Sheet and Strip Steel, Moscow, "Metallurgiya" Press, 1971, 494 p., 173 illustrations, 30 tables, 247 bibliographic references

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VITKIN, A. I., and TEYNDL, I. I., Metal Coatings of Sheet and Strip Steel, Moscow, "Metallurgiya" Press, 1971, 494 p., 173 illustrations, 30 tables, 247 bibliographic references

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

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USSR

UDC 616.988.75-084.47 "1969"

BOBYLEVA, T. K., SLEPUSHKIN, A. N., RUSSINA, A. Ye., VITKINA, B. S., GRINEBERG, I. R., TARASOV, A. A., LIVERGAND, M. I., and ZHDANOV, V. M., Institute of Virology imeni Ivanovskiy, Academy of Sciences USSR, and Smolenskaya Oblast Sanitary Epidemiological Station

"Evaluation of the Efficacy of Mass Vaccinations Against Influenza" Report III

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii No 9, 1971, pp 18-23

Abstract: Double vaccination of approximately 50% of the population of the city of Smolensk with live influenza vaccine in 1968 proved to be effective in controlling the disease even during the 1969 epidemic caused by a new antigenic variant of type A influenza virus. Almost half as many contracted the disease as in the nearby cities of Vitebsk and Kaluga, where the population was not vaccinated -- 28.8, 54.3 and 48.7%, respectively. The difference between the adult sick rates was even greater -- 17.9, 38.1, and 41.2%, respectively. The side effects of the vaccine were minimal. The results of a similar mass vaccination program in Yartsevo were poor mainly because vaccine from the same strain had been used for three successive years and most of the people had become immune to it. Hence the vaccine strains should be changed periodically (once every 2 or 3 years).

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

USSR

VITKINA, B. S., RUSSINA, A. Ye., BOBYLEVA, T. K., GRINBERG, I. R., SOKOLOVA, N. N., DREYZIN, R. S., and SLEPUSHKIN, A. N., Smolenskaya Oblast Sanitary Epidemiological Station, and Institute of Virology imeni D. I. Ivanovskiy, USSR Academy of Medical Sciences

"Etiology and Epidemiology of the 1969 Influenza Outbreak in Smolensk"

Moscow, Voprosy Virusologii, No 4, Jul/Aug 71, p 494

Translation: The paper presents results of a study of the 1969 influenza outbreak in Smolensk, where almost one-half of the inhabitants had received live influenza vaccines during the preceding five autumn and winter seasons. The disease developed more gradually than during the two previous epidemics (1965 and 1967). Influenza virus was isolated from 127 out of 355 patients. A study of the antigenic structure of 20 strains revealed that all strains were neutralized by 1/68 Hong Kong serum either completely or to one-half of the homologous titer. No essential differences were found between strains obtained from vaccinated and nonvaccinated individuals. All strains were highly sensitive to the inhibitors present in normal guinea pig or horse serum. Serological shifts in the patients coincided with the epidemic influenza curve. The frequency of influenza diagnosed among 235 clinic patients was compared with that of 304

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USSR

VITKINA, B. S., et al, Voprosy Virusologii, No 4, Jul/Aug 71, p. 494

hospitalized patients. Serological confirmation of the diagnosis was 8% greater among the hospitalized group. However, at the end of the epidemic, when morbidity returned to almost normal level, influenza was twice as frequent in clinic than in hospitalized patients. Comparison of the frequency of influenza and of other acute respiratory diseases recorded during the interepidemic year of 1968 and during the epidemic in 1969 revealed that the frequency of parainfluenza and of adenoviral infections was approximately the same during both periods.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

USSR UDC: 621.317.34

BONDARENKO, I. K., VIT'KO, Yu. K.

"Loop Reflectometers and Circuits for Automatic Measurements of the Parameters of SHF Channels"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 2 (Reports of the All-Union Scientific and Technical Conference on Radio Engineering Measurements. Vol. 2), Novosibirsk, 1970, pp 18-20 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12A367)

Translation: Measurement of mismatches (SWR or modulus of the coefficient of reflection) makes up the greatest proportion of the measurements in adjusting and checking the elements and junctions of an SHF channel. For these purposes, automatic SWR meters are used whose error is characterized chiefly by non-identity of the parameters of directional couplers. To reduce these errors, cut down the overall dimensions of the SHF section, etc., a loop reflectometer is developed which replaces the directional couplers in the SWR meter. The construction and principle of operation of the reflectometer are described. Data are given on errors. Bibliography of one title. E. L.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

USSR

UDC: 621.372.5

VITKOV, M. G. and SHEBES, M. R.

"Rational Synthesis of the Brune Cycle"

Tr. uchebn. in-tov svyazi. M-vo svyazi SSSR (Transactions of the Communication Education Institutes. Ministry of Communications, USSR) 1970, No. 48, pp 225-228 (from Rzh-Radiotekhnika, No. 3, March 71, Abstract No. 3A162)

Translation: The four-terminal Brune network is considered in the form of a capacitance in combination with two inductively coupled coils with a coupling coefficient of unity, loaded with a resistance. An equation is derived for the determination of this resistance. Two illustrations, bibliography of one. N. S.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

UDC 621.357.7:669.248

USSR

VITKOVA, ST. D., PANGAROV, N. A.

"Effect of Adsorption of Halide Ions on the Variation of the Type of Texture of Nickel Galvanic Coatings"

V sb. Nauch.-tekhn. konf. po probl. Razrab. mer. zashchity met. korrozii, 1971. Tezisy dokl. Vyp. 2, Sekts. 4-5 (Scientific and Technical Conference on the Problems of the Development of Measures for Protection of Metals from Corrosion. 1971. Topics of Reports. Vyp. 2. Sections 4-5 -- collection of works), Moscow, 1971, pp 112-115 (from RZh-Khimiya, No 6 (II), Jun 72, Abstract No 6L301)

Translation: A study was made of the effect of adsorption of Cl^-, Br^- and I^- on the predominant orientation of Ni crystals in electrolytically deposited layers from a solution containing 280 grams/liter of $NiSO_4 \cdot 7H_2O$, 30 H_3BO_3 with additions of KCl ($1 \cdot 10^{-3}$-$3 \cdot 10^{-1}$ M), KBr ($1 \cdot 10^{-3}$-$4 \cdot 10^{-1}$ M) and KI ($1 \cdot 10^{-5}$-$1 \cdot 10^{-3}$ M). The deposition took place at 50° with D l amp/dm^2 and pH 4.5. It was found that as a result of adsorption of halide ions, the formation of two-dimensional nucleating centers of Ni with [211] orientation becomes possible. Thus, the [211] texture can be both the result of twinning processes and direct nucleation of two-dimensional nucleating centers. The texture of the Ni deposits varied with an increase in concentration of the halide ions the adsorption of which disturbed the previously established sequence of variation of textures

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

USSR

VITKOVA, ST. D., et al., Nauch.-tekhn. konf. po probl. Razrab. mer. zashchity met. korrozii, 1971. Texisy dokl. Vyp. 2, Sekts. 4-5, Moscow, 1971, pp 112-115

with growth of the cathode overvoltage. Under the adsorption conditions, the texture axis varied with an increase in cathode overvoltage according to the following series: [111], [110] and [100].

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

USSR UDC 621.357.7:669.258

ARMYANOV, ST., VITKOVA, ST., PANGAROV, N.

"Dependence of the Magnetic Characteristics of Electrolytic Cobalt Coating on the Texture and Phase Composition"

V sb. Nauch.-tekhn. konf. po probl. Razrab. mer zashchity met. ot korrozii, 1971.Tezisy dokl. vyp. 2. Sekts. 4-5 (Scientific and Technical Conference on the Problems of the Development of Measures for Protection of Metals from Corrosion. 1971. Topics of Reports. Vyp. 2. Sections 4-5 -- collection of works), Moscow, 1971, pp 101-104 (from RZh-Khimiya, No 6 (II), Jun 72, Abstract No 6L300)

Translation: It was established that the magnitude of the coercive force (H_c) of Co deposits depends both on the orientation of the α-Co crystals and on the amount of β-phase of the Co in the deposit. For the orientation of the α-Co [0001]H_c and the rectangularity of the hysteresis loop decreased with an increase in perfection of the texture since in this case the axis of easy magnetization lay perpendicular to the plane of the plate. With a texture [1120] of α-Co and [110] of β-Co respectively, H_c increased with a decrease in the amount of Co phase since the magnetic anisotropy constant of α-Co is higher than that of β-Co.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

(2)

USSR

UDC 66.074.7:546.56

LASKORIN, B. N., YUZHINA, A. D., SMIRNOVA, N. M., SADOVNIKOVA, G. I., NOVIKOV, YU. P., and VITKOVSKAYA, A. A.

"Ion Exchanging Fibers and Fabrics . III. Extraction of Gold From Cyanide Solutions and From Pulps by Means of Ion Exchanging Fabrics"

Leningrad, Radiokhimiya, Vol 15, No 2, 1973, pp 236-240

Abstract: The possibility of extracting gold from cyanide solutions and pulps obtained after leaching out the gold containing ores by means of ion exchange fabrics has been studied. The capacity for gold of the medium and strongly basic anion exchange fabrics under static conditions (0.8-1.4 mg/g) is comparable to the capacity of the granular sorbent AM (1.74 mg/g). Under identical conditions the fabrics absorb 5.6 times less admixtures than the resin AM, the rate of gold absorption being 20-30 times faster than by the resin. The fabrics are easily regenerated with hydrochloric solutions of thiourea. Under dynamics conditions 62.2% of gold is removed from the fabric by three volumes of the regenerating solution.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

VITKOVSKAYA, O.N.

ELECTRICAL DISCHARGES

JPRS 61504

18 March 1974

EXPERIMENTAL STUDY OF THE CHARACTERISTICS OF ELECTRICAL DISCHARGE BETWEEN COAXIAL COPPER ELECTRODES IN A MAGNETIC FIELD

[Article by V. I. Afferov, O. N. Vitkovskaya, Yu. S. Ustinov, G. I. Shcherbakov; Moscow, Teplofizika Vysokikh Temperatur, Russian, Vol 12, No 6, 1973, signed to press 4 July 1973, pp 1142-1146]

The results of experimental investigations of electrical discharge in the annular gap between cooled copper electrodes are presented in this article. The experiments were conducted at pressures of 0.3-7 abs.atm with magnetic induction of 0.1-1 T, current of 400-1,000 A and electrode gap of 10-20 mm. Empirical formulas are presented for determination of discharge voltage and discharge velocity in an annular gap.

Electrical discharge, rotating in an annular gap in a transverse magnetic field, is used extensively at the present time in preheaters of aerodynamic systems and in various chemical industry installations. However the characteristics of such discharge, determined by various authors [1-5], especially the velocity and volt-ampere characteristics, vary substantially. The existing experimental results were obtained for narrow ranges of change of magnetic field and discharge current, basically at atmospheric pressure. Described in this article are studies of discharge characteristics at pressures less than and greater than atmospheric, and with discharge stabilized by means of a magnetic lens. This method of stabilization eliminates axial movement and deformation of the discharge channel, which reduces pulsations of current and discharge voltage and variations of the rate of rotation. In addition, an increase of magnetic induction in the radial direction prevents shunting of discharge.

Experimental Method. The experimental investigations were conducted on an apparatus representing a coaxial plasmatron with discharge rotated by a magnetic field. The apparatus is described in detail in [6]. The diameter of the external copper electrode is 80-90 mm and the diameter of the central electrode is 50-60 mm, which provides for variation of the electrode gap from 10 to 20 mm.

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The investigations were conducted in air at flow rates G = (0.3-7)·10⁻³ kg/s, pressures p = 0.5-7 abs.atm, currents I = 100-1,000 A and magnetic induction B = 0.1-1 T. The distribution of the axial component of the magnetic field in the discharge zone is illustrated in Figure 1 for various coil currents.

The solenoid that developed the magnetic field was powered either consecutively with the discharge or from an independent power source, in the latter case the equivalent active and inductive resistances were included in the discharge power circuit.

During experiments the gas flow rate, chamber pressure, current and voltage of discharge and magnetic induction were measured. Current and voltage were recorded with N-004, N-103 and Ok-17M oscillographs. High-speed photography of discharge with an SFR-2M camera was combined synchronously with recording of discharge current and voltage using a scheme that precluded the possibility of double exposure [7].

Figure 1. Distribution of axial component of magnetic field in discharge zone for various coil currents: 1 -- I = 200 A; 2 -- 400; 3 -- 600; 4 -- 1,000; discharge zone is cross hatched.

Experimental Results. Analysis of data gained from the films of discharge revealed that even for B ≥ 0.1 T the discharge zone is not a distinct pinched column, but is blurred in the direction of rotation so that its width is of the same order of magnitude or greater than the electrode gap. As the magnetic induction increases at constant current and pressure, the rate of rotation of the discharge zone increases and the width of the zone in the direction of rotation and its structure remain the same.

At currents of 400-600 A and pressure of 5-6 abs.atm the discharge gap does not have the characteristic contracted channel and the near-electrode regions glow more brightly than the discharge column. When pressure is decreased to 0.5 abs.atm the discharge zone expands in the direction of rotation, filling an increasingly larger part of the electrode gap, but its structure remains unchanged. At the same time the discharge velocity increases.

As current increases the discharge zone expands in the direction of rotation and the column begins to glow more brightly and is comparable with the glow of the near-electrode regions. The rate of rotation of discharge increases.

It may be concluded that when B ≥ 0.1 T discharge in the investigated range of currents and pressures cannot be considered an arc discharge in the

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

1/2 011 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--THE LOGIC OF MANAGEMENT -U-

AUTHOR--VITKOVSKIY, A.

COUNTRY OF INFO--USSR

SOURCE--SOTSIALISTICHESKAYA INDUSTRIYA, MAY 30, 1970, P 2, COLS 1-4

DATE PUBLISHED--30MAY70

SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES

TOPIC TAGS--INDUSTRIAL MANAGEMENT, INDUSTRIAL PRODUCTION/(U)NAIRI DIGITAL COMPUTER, (U)ATE80 DIGITAL COMPUTER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1986/1509 STEP NO--UR/0533/70/000/000/0002/0002

CIRC ACCESSION NO--AN0103326

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

2/2 011 UNCLASSIFIED PROCESSING DATE--16OCT70
CIRC ACCESSION NO--AN0103326
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE REVIEWS SOME OF THE STEPS UNDERTAKEN AT THE PLANT IN ORDER TO IMPROVE THE EFFICIENCY OF MANAGEMENT, SUCH AS THE ESTABLISHMENT OF A CALCULATION STATION FOR ACCOUNTING UPERATIONS, THE INSTALLATION OF THE ELECTRONIC COMPUTER, NAIRI, AS AN AID TO ENGINEERS, AND THE ALPHABET DIGITAL COMPUTER "ATE-80" FOR PRODUCTION MANAGEMENT. THE PLANT'S COMPUTATION CENTER WILL BE COMPLETE WITH THE INSTALLATION OF "MINSK-22" COMPUTER. THE AUTHOR MENTIONS THAT THE PLANT ANNUALLY PRODUCES 52 TYPES OF PRESSES RANGING IN A CAPACITY BETWEEN 250 AND 6,000 TONS. FACILITY: PLANT OF HEAVY MECHANICAL PRESSES-VORONEZH.

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

USSR

UDC 542.61:541.49:546.791.6

KONONENKO, L. I., BURTNENKO, L. M., and VITKUN, R. A.

"Extraction of Mixed Complex Compounds of the Uranyl Ion with Tenoyltrifluoroacetone and Organic Compounds"

Leningrad, Radiokhimiya, Vol 13, No 4, 1971, pp 556-562

Abstract: Benzene extractions of mixed complex compounds of the uranyl ion with tenoyltrifluoroacetone and 1-phenyl-2,3-dimethylpyrazolone-5 (Antipyrine) or 1,10-phenanthroline, giving products with the formula UO_2TTA_2B were carried out to check on theoretically derived expressions for the distribution coefficients of the metal. A mechanism for the extraction of this type of compounds has been discussed. Formulas have been derived expressing the distribution coefficient of the uranyl ion E as a function of hydrogen ion and ligand concentrations. The E values were determined experimentally and related to pH of the solution, concentration of the ligand anions, concentration of base in the aqueous phase, as well as of the concentration of electronegative ligand and base in the organic phase. The extraction constants for these complexes were determined: for UO_2TTA_2Ant $\log K_{ex} = 3.212 \pm 0.092$, and for UO_2TTA_2Phen $\log K_{ex} = 2.53 \pm 0.01$.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

1/2 016 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--ATOMIC FLUORESCENT DETERMINATION OF MERCURY -U-

AUTHOR-(03)-VITKUN, R.A., POLUEKTOV, N.S., ZELYUKOVA, YU.V.

COUNTRY OF INFO--USSR

SOURCE--ZH. ANAL. KHIM. 1970, 25(3), 474-8

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--MERCURY, METAL CHEMICAL ANALYSIS, FLUORESCENCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1058 STEP NO--UR/0075/70/025/003/0474/0478

CIRC ACCESSION NO--AP0123051

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

2/2 016 UNCLASSIFIED

CIRC ACCESSION NO--AP0123051 PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN AT. FLUORESCENT METHOD WAS DEVELOPED FOR HG DETN. BY USING A LOW TEMP. FLAME OBTAINED WITH A C SUB3 H SUB8-C SUB4 H SUB10 AND AIR MIXT. USING THE REDN. OF HG TO METAL DURING ATOMIZATION. THE SENSITIVITY OF HG DETN. IS 0.002 MUG-ML AT A CONFIDENCE LEVEL OF 95PERCENT. THE EFFECT OF ORG. SOLVENTS, ANIONS, CATIONS, AND ELEMENTS REDUCED TO THEIR ELEMENTAL STATE IN THE PRESENCE OF SNCL SUB2 WAS STUDIED. IN THE ABSENCE OF SNCL SUB2 FLUORESCENCE INTENSITY OF HG IN THE FLAME DECREASES BY 2 ORDERS; GREATER THAN OR EQUAL TO 5N H SUB3 PO SUB4, GREATER THAN OR EQUAL TO 2N H SUB2 SO SUB4 AND HCLO SUB4 AFFECT THE FLUORESCENCE INTENSITY; HOAC, HNO SUB3, AND HCL (1N) AND 0.5N HBR DECREASE THE INTENSITY. S PRIME2NEGATIVE MUST BE ABSENT DURING HG DETN. LI, NA, K, CS, CU, IN, BE, MG, CA, SR, BA, ZN, CD, AL, ZR, PB, V, BI, MO, W, MN, FE, AND CO, 5 MG-ML, DO NOT AFFECT THE DETN. OF 0.5 MUG HG-ML; 50 MUG AU, PT, CR(VI), AND 0.5 MG AG ALL IN 1 ML INTERFERE IN THE DETN. OF 1 MG HG-ML. FACILITY: LAB., INST. GEN. INORG. CHEM., ODESSA, USSR.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

USSR

UDC 669.14.018.8:620.18:620.17

VITMAN, D. V., TARKHOV, N. A., and STROYEV, V. S.

"Change of Structure and Properties of Cr-Ni Steels During Heating in Carbonaceous Atmospheres"

Mosoow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 4, Apr 73, pp 9-12

Abstract: Effect of structure and properties of Kh23N18 and Kh20N14S2 steels in the form of pipe were studied for conditions of crack development according to changes in structure and chemical composition. Kh23N18 steel pipe had been exposed to carbon-containing atmospheres at 900-920°C for one year while Kh10N14S2 pipe had been subjected to the same atmosphere at 950°C for 2000 hours. The diffusion layer was 4.6 mm deep for Kh23N18 steel and 1.8-2.2 mm deep for Kh20N14S2 and the structure consisted of austenite and chromium carbides of the $M_{23}C_6$ and M_7C_3 types with the deep layers containing the $M_{23}C_6$ carbide. In the process of saturating these steels with carbon there occurs the discontinuous transformation of $M_{23}C_6$ carbides into M_7C_3 carbides which permits enrichment of the austenite with chromium. Metal of the diffusion layer in Cr-Ni steels possesses low ductility at 20-700°C which has been associated with the formation of structure stresses caused by the

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

USSR

VITMAN, D. V., et al., Metallovedeniye i Termicheskaya Obrabotka Metallov, No 4, Apr 73, pp 9-12

different coefficients of linear thermal expansion of the structural constituents and the presence of a large amount of the carbide phase. Five figures, three tables, six bibliographic references.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

USSR

BERLOVICH, E. Ye., BLINNIKOV, Yu. S., VAYSHNIS, P. P., VITMAN, V. D., YELKIN, Yu. V., IGNATENKO, Ye. I., PANTELEYEV, V. N., and TARASOV, V.K., B. P. Konstantinov Nuclear Physics Institute

"Short-Lived Osmium Isotopes"

Moscow, Izvestiya Akademii Nauk SSSR -- Seriya Fizicheskaya, No 12, 1972, pp 2490-2498

Abstract: The purpose of the experiments described in this paper is to detect 175Os and to obtain information concerning gamma irradiation of this and lighter osmium isotopes. The short-lived isotopes were obtained in spallation reactions by irradiating mercury with 1-Gev protons in the synchrocyclotron of the*irradiation conditions vary, inasmuch as the proportion of the different Os isotopes in the specimens depends on the mode of proton bombardment. In the gamma irradiation, the gamma ray spectrum was measured by a Ge(Li) detector, with a resolution of 3.5 kev for a line of 662 kev, and the spectra were recorded by an electronic system including an AI-1024 analyzer, a control block with timer, and the Minsk-22 computer to measure half-lives. Isotopes

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

USSR

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BERLOVICH, E. Ye., Izvestiya Akademii Nauk SSSR -- Seriya Fizicheskaya, No 12, 1972, pp 2490-2498

with half-lives of more than 2.5 minutes and less than 2.0 minutes were investigated, and tables of their gamma-radiation spectra are given. Results of the present paper are compared with those of earlier papers. An attempt was also made to find a genetic connection between short-lived osmium and rhenium isotopes, and a table for the gamma irradiation of ^{174}Re is also given.

* Leningrad Institute of Nuclear Physics;

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

USSR

UDC 621.317.757

VITMAYEV, G. A., POPOV, S. N.

"An Instrument for Visual Measurement of the Phase-Amplitude and Phase--Frequency Characteristics of Two-Terminal Pair Networks"

V sb. Tonkiye magnitn. plenki, vychisl. tekhn. i radiotekhn. T. 1 (Thin Magnetic Films, Computer Technology and Radio Engineering--collection of works. Vol 1), Krasnoyarsk, 1971, pp 75-78 (from RZh-Radiotekhnika, No 11, Nov 71, Abstract No 11A316)

Translation: The paper describes an instrument designed for: 1) automatic measurement and observation of the phase-amplitude characteristics of nonlinear two-terminal pair networks in a frequency band, or the phase--frequency characteristics of two-terminal pair networks throughout the dynamic range with manual setting of the carrier frequency or level respectively; 2) measurement of phase difference with screen readout or by the compensation method. Technical data are given as well as a block diagram. One illustration, E. L.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

USSR

UDC: 621.396.6.017.72

VITOKHIN, A. D., VOL'F, Ye. M.

"A Method of Studying the Stationary Temperature Field of an Object in a Vacuum"

USSR Author's Certificate No 259496, filed 14 Jul 67, published 20 May 70 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12V281 P)

Translation: This Author's Certificate introduces a method of studying the stationary temperature field of an object in a vacuum by modeling the object and measuring its temperatures. The scope for such studies is extended by placing a model which is geometrically similar to the object in a vacuum chamber, shielding it from the walls of the chamber by a heat-absorbing screen, and altering the radiation heat transfer to the model in inverse proportion to the change in linear dimensions of the object by creating the necessary temperature differential between the model and the heat-absorbing screen. Ye. M.

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Measuring, Testing, Calibrating

UDC (546.17+546.21):543.51

USSR

VITOL', E. N., ORLOVA, K. B., and IVANENKO, N. A.

"Background Registration of the Mass-Spectrometer and Reproducibility of the Determination of the Isotopic Composition of Nitrogen and Oxygen"

Moscow, Zavodskaya Laboratoriya, Vol 37, No 12, 1971, pp 1466 —1469

Abstract : The background effect on results of the isotopic analysis of nitrogen, oxygen, and hydrogen by molecular peaks of N_2, O_2, and H_2 which coincide with the most intensive background peaks was investigated with the mass-spectrometer MI-1305. The extrapolation of linear graphs in coordinates $k - 1/\varepsilon$ (where: k=concentration of the heavy isotope calculated by disregarding the background and ε=num of measured molecular peaks on the axis of ordinates, $\varepsilon \to \infty$,) yields concentrations which are independent of the effect of the background. Concentrations which are close to extrapolation results are received by subtraction from peak values of the analyzed gas

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

USSR

VITOL', E. N., et al., Zavodskaya Laboratoriya, Vol 37, No 12, 1971, pp 1466-1469

of values of corresponding background peaks. The reproducibility of the isotope analysis is defined by scattering of the background and the reading error on the millivoltmeter scale. Such errors as the instability of the filling with gas and the working of the ion source and the ion current amplifier are unessential. Four illustr., three tables, four formulas, two biblio. refs.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

USSR

UDC 615.217.34.012.1+615.217.34.015.4

SOKOLOV, G. P., VITOLIN', R. O. and GILLER, S. A., Institute of Organic Synthesis, Academy of Sciences Latvian SSR, Riga

"The Synthesis and Pharmacological Properties of Hydrochlorides and Methiodides of Aminomethyl Derivatives of 2-/diphenyl (oxy)methyl/-1,3-Dioxolane"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol 7, No 12, Dec 73, pp 10-15

Abstract: Five pairs of cis-trans isomers of 1,3-dioxalone derivatives of diphenylglycolaldehyde were synthesized. The diethyl acetal of diphenylglycolaldehyde was transacetylated with racemic 1-O-n-tosylglycerine, treated with secondary amines at temperatures to 150°, and precipitated as hydrochlorides or methiodides. Proton magnetic resonance spectra of these compounds were said to show that proton shielding or deshielding on the anisotropic groups can be used to determine structural conformation. While none of the compounds possessed nicotinolytic properties, they all had muscarinolytic properties in mice and peripheral cholinolytic activity in isolated guinea pig intestine. Hydrochlorides had greater central activity than methiodides, and dimethylamine and diethylamine derivatives were more active than heterocycles. Cis isomers were found to be more effective than trans.
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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

USSR UDC 612.015:615.739:577.158

VITOLIN', S. P., STEPCHKOV, K. A., FRANK, YE. L., and KREKER, YU. N., Riga Medical Institute and All-Union Scientific Research Institute for the Biosynthesis of Proteins

"Utilization of Nonnutritive Proteins in Human and Animal Nutrition. II. Yeast Proteins as a Source of Nutritive Nitrogen"

Riga, Izvestiya Akademii Nauk Latviyskoy SSR, No 2, 1971, pp 71-77

Abstract: The nutritive value of yeast preparations obtained by enzyme hydrolysis from Torula utilis in combination with various bread grains was studied in weanling rats. The growth of rats fed yeast, wheat flower, and fibrin (4:5:1 or 5:4:1) enriched with methionine was virtually indistinguishable from the control which received casein. A combination of yeast and barley groats or rice (6:4) manifested a much higher anabolic efficiency than did casein. The animals gained 48 and 38 g, respectively, in 10 days compared with 31 g in the control kept on the casein diet. A combination of whole blood proteins, yeast, and casein (3:4:3) or 5:4:1) resulted in weight gains equal to those produced by casein alone. It would appear, therefore, that nonnutritive proteins can be converted into nutritive forms and that the biological efficiency of plant proteins can be enhanced by combining them with a nonnutritive substance like yeast. 1/1

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

USSR UDC 621.316.722.1 (088.8)

GUZOVSKIY, I.G., VITOLIN'SH, ZH.K.

"Device For Voltage Regulation At The Output Of A Rectifier"

USSR Author's Certificate No 259182, filed 7 June 68, published 28 Apr 70 (from RZh--Elektronika i yeye primeneniye, No 11, November 1970, Abstract No 11B494P)

Translation: A circuit is patented for a d-c voltage regulator with a series regulator transistor, and a single-stage d-c amplifier which is supplied from a rectifier [vypryamitel']. The distinctive feature of the circuit is the use in the rectifier of a network [tsepochka] of an electrolytic capacitor and a saturation choke coil connected in series. The saturation choke coil is controlled with the aid of a transistor by a d-c voltage signal at the collector of the regulator transistor. When the output voltage is small, the current of an auxiliary transistor equals zero. The saturation choke coil has a small resistance and the electrolytic capacitor is directly connected to the output of the rectifier. With a large output voltage, the resistance of the saturation choke coil is increased and the capacitor is disconnected from the output of the rectifier. Such a circuit increases the speed of response and improves the form of the output voltage of the rectifier. 1 ill. S.D.

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1/2 021 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--DIOLS AS A SOURCE OF ENERGY IN ORAL AND PARENTERAL ALIMENTATION -U-

AUTHOR-(03)-KREMER, YU.N., VITOLINYA, S.P., FRANK, YE.L.

COUNTRY OF INFO--USSR

SOURCE--VOPROSY PITANIYA, 1970, NR 3, PP 62-67

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--POLYHYDROXY ALIPHATIC ALCOHOL, DIET, ANIMAL PHYSIOLOGY, RAT, DOG

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/0003 STEP NO--UR/0244/70/000/003/0062/0067

CIRC ACCESSION NO--AP0120703

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

2/2 021 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0120703

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECTIVENESS OF USING 1,3,BUTANDIOL (BD) AND 1,2,PROPANDIOL (PD) AS A SOURCE OF ENERGY IN ORAL FEEDING WAS STUDIED ON WEANED RATTLINGS. BOTH DIOLS, LIKE SORBITE (SORBITOL), REPLACED (IN TERMS OF ISOCALORIES) 10 OR 20PERCENT OF SACCHAROSE IN SEMISYNTHETIC ANIMAL RATIONS. THE LATTER WERE GIVEN FOR 10 DAYS. THE WEIGHT GAIN OF THE ANIMALS KEPT ON A DIET CONTAINING BUTANDIOL (10 OR 20PERCENT) WAS NOT INFERIOR TO THAT IN ANIMALS OF CORRESPONDING CONTROL GROUPS. THE GROWTH RATE OF RATTLINGS IN WHOSE RATION 10PERCETN OF SACCHAROSE WAS REPLACED BY PD WAS HIGHER AND OF THOSE WITH 20PERCENT REPLACEMENT LOWER THAN IN THE CASE OF CONTROL DIET. THE TEN PERCENT OF SORBITE WHICH SUBSTITUTED CORRESPONDING AMOUNTS OF SACCHAROSE PRODUCED A MARKED INHIBITION OF GROWTH, WHILE A 20PERCENT REPLACEMENT RESULTED IN DEATH OF THE ANIMALS. INTRAVENOUS INJECTION TO DOGS OF A BD OR PD MIXTURE WITH GLUCOSE (IN A RATIO OF 1:1 IN TERMS OF CALORIES) AT THE RATE OF 50 GREAT CALORIES PER 1 KG OF BODY WEIGHT SHOWED THE NITROGEN BALANCE FIGURES TO BE NOT ANY LOWER THAN AFTER INTRODUCTION OF CALORIES EQUIVALENT AMOUNTS OF GLUCOSE, THIS PROVING THAT BOTH DIOLS ADMINISTERED PARENTERALLY ARE WELL ASSIMILATED BY THE CANINE ORGANIZM AS A SOURCE OF ENERGY. FACILITY: KAFEDRA BIOKHIMII I TSENTRAL'NAYA N-I LABORATORIYA RIZHSKOGO MEDITSINSKOGO INSTITUTA.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

1/2 031 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--PARAMAGNETIC RELAXATION IN LITHIUM RADIATION COLLOIDS -U-

AUTHOR-(03)-EKMANIS, YU., VITOLS, A., SVARCS, K.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(2), 487-91

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--COLLOID, LITHIUM FLUORIDE, NEUTRON IRRADIATION, EPR SPECTRUM, LINE WIDTH, PARTICLE SIZE, SPIN LATTICE RELAXATION, IONIC CRYSTAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1983/1615 STEP NO--UR/0181/70/012/002/0487/0491

CIRC ACCESSION NO--AP0054465
UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

2/2 031 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0054465

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RADIATION COLLOIDS WERE CONSIDERED OF LI IN REACTOR IRRADIATED LIF CRYSTALS BY EPR METHODS AS WELL AS ELECTRON MICROSCOPY. THE EPR LINE WITH WIDTH DELTA H SMALLER THAN OR EQUALS TO 50 G CORRESPONDS TO LI COLLOIDS. FOR COLLOIDS WITH A DIAM. D SMALLER THAN 1-2 MU, A VERY EFFECTIVE MECHANISM OF LINE BROADENING IS SURFACE RELAXATION. THE PROBABILITY OF SPIN REVERSAL ON THE SURFACE AND THE TIME OF SPIN LATTICE RELAXATION ARE 10 PRIME NEGATIVE4 AND 10 PRIME NEGATIVE6 SEC, RESP. FACILITY: INST. FIZ., RIGA, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

USSR

UDC 669.28'295:620.17

VITORSKIY, Ya. M., GAL'CHINSKIY, F. K., KAVERINA, S. N., KUZNETSOVA, A. S., MAT'YASH, V. A., SOGRISHIN, Yu. P., and TKACHENKO, V. G., Institute of Metal Physics, Academy of Sciences UKr SSR

"Effects of the Rate and Temperature of Straining on the Structure and Properties of the Alloy Mo-0.5% Ti"

Moscow, Metallovedeniye, No 6, 1971, pp 50-53

Abstract: Effects of the rate and temperature of straining on the structure and properties of the molybdenum alloy Mo-0.5% Ti were investigated on specimens strained at speeds of 0.2,5.0, and 20 m/sec on the K862S hot stamping press (630 tons), the M211 exhaust stamping hammer, and the IM-39 high-frequency unit, respectively. The investigation results demonstrate a high plasticity of the alloy Mo-0.5% Ti both in the recrystallized and strained conditions. A high-rate straining significantly increases the plasticity in the working process. Macrostructures of specimens upset at 600-1200°C at high and low speeds show deadlocks. Sectional hardness changes of specimens upset with 70% of strain by 900°C were by 0.2 m/sec strain rate HV 195-266 and by 20 m/sec strain rate HV 212-333. For an optimum strength and plasticity correlation, a cellular structure must be produced in the ingot with not less than 70% of strain at a temperature which is lower than the recrystallization temperature under conditions excluding a heat effect. Six figures, one table, six bibliographic references.
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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

USSR

UDC 621.317.761

VITOSLAVSKIY, E. P., VUL'CHIN, Yu. G., IMSHENETSKIY, V. V., MARTYNIV, M. S., and SOLYANKO, B. V.

"UHF Frequency Meter"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No. 33, 1971, p 155

Abstract: This frequency meter contains an electronic counter, tuned oscillators, a mixer, and two AFC circuits. To simplify the circuit and the measuring process, the reference frequency inputs of both phase detectors are connected to the output of one of the time-base divider stages of the counter. The input of this stage is connected to the mixer output.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

USSR

UDC: 621.315.592

VITOVSKIY, N. A., VIKHLIY, G. A., and MASHOVETS, T. V.

"Radiation-Stimulated Complex Formations in p-Type Indium Antimonide"

Leningrad, Fizika i tekhnika poluprovodnikov, No 10, 1972, pp 1995-2002

Abstract: Earlier papers have noted changes in the parameters of indium antimonide under x-rays or light at 78° K that remained for quite a long time after irradiation had ceased. The purpose of the present paper and the experimental work it describes is to investigate further the mechanism of this process and to clarify the nature of the defects formed by the irradiation. The experimental conditions were chosen such that the change in parameters of the specimens and the process of surface overcharging are practically eliminated. The experiments show that the volume effect does not increase the hole concentration, and that the irradiation results in very radical changes in the concentration of the impurities, in the mobility, and other factors. It is also found that clarification of the observed phenomena is possible without resorting to concepts of shockless generation of internodal atoms and vacancies.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

USSR

UDC: 621.315.592

VITOVSKIY, N. A., et al, Fizika i tekhnika poluprovodnikov, No 10, 1972, pp 1995-2002

The authors thank B. I. Shklovskiy for participating in a discussion of the work.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

USSR

UDC 537.311.33:546.682'86

VITOVSKIY, N.A., VIKHLIY, G.A., GALAVANOV, V.V., MASHOVETS, T.V., KHANSEVAROV, R.YU.

"Radiation Defects In Indium Antimonide"

V sb. Radiatsion. fiz. nemet. kristallov (Radiation Physics Of Nonmetal Crystals--Collection Of Works), Minsk, Nauka i tekhn., 1970, pp 124-130 (from RZh--Elektronika i yeye primeneniye, No 1, January 1971, Abstract No 1B41)

Translation: It is shown that defects originating in InSb during irradiation of it by electrons and γ rays are also formed in p-type InSb and under the effect of soft radiation -- x-rays with maximum energies to 55 kev and visible light. It is obvious that the process of formation of these defects is connected with the effect of some nonimpact mechanism of radiation defect formation. 6 ill. 12 ref. Summary.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

USSR

UDC 621.378.9:539.293:535

LISITSA, M.P., SIDORKO, P.I., KOZOL', P.YE., VITRIKHOVSKIY, N.I.

"Two-Photon Absorption In CdS_xSe_{1-x} Single Crystals"

Kvantovaya elektronika (Quantum Electronics), Moscow, No 5(11), 1972, pp 53-57

Abstract: The effect of component composition of two-photon absorption in CdS_xSe_{1-x} single crystals is investigated over a wide range of concentrations of sulfur and selenium. The experimental equipment used in the work employs a ruby laser which generates single pulses with a 20 Mw power and a duration of 20 nanosec. The anisotropy is determined of two-photon absorption and the restriction of intensity of the radiation passing through the specimen. The dependence is obtained of the coefficient of two-photon absorption on the width of the forbidden band of the crystals. The experimental data agree qualitatively with theory. It is shown that a superlinear increase of the two-photon absorption with a decrease in the width of the forbidden band leads to an increase in efficiency of the optical pumping of a semiconductor laser. 6 fig. 7 ref. Received by editors, 21 June 1971; after revision, 27 Sept 1971.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

USSR

MOROZOV, A. I., BELYAYEV, A. D., VITRIKOVSKIY, N. I., Institute of Semiconductors of the Academy of Sciences UkrSSR, Kiev

"Acoustoelectric Effect in $Cd_xZn_{1-x}S$ Single Crystals"

Leningrad, Fizika Tverdogo Tela, No. 4, Apr 71, pp 1079-1083

Abstract: $Cd_xZn_{1-x}S$ photoconducting single crystals grown by the synthesis method from the vapor phase with a ZnS content from 0 to 40 mol % and with a dark resistance of 10^5-10^{10} ohm·cm were investigated. Indium contacts were applied in a vacuum on the {0001} plane. The electroacoustic effect was studied in a pulse mode with longitudinal ultrasonic waves in the 20-40 MHz frequency range. Radial pulses of a length ~100 μsec and an amplitude of up to 200 v were used. A parity electroacoustic effect was observed in the samples, and the effect increased with an increase in the Zn content. The magnitude of the parity electroacoustic effect was studied as a function of the conductivity of the samples ($\sigma = 4 \cdot 10^{-10}$-$2\ 10^{-5}$ $ohm^{-1} \cdot cm^{-1}$), the spectral composition of the illumination (λ = 0.4-0.7 μ), and the intensity of the ultrasonic wave. The strength of the electroacoustic effect reached 15 v and the value of the average field in the sample was 100 v/cm. It is noted that the effect of electron-phonon interaction has been discussed theoretically but that the mechanism for the rise of a parity acoustoelectric effect requires further explanation.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

1/2 027 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--TEMPERATURE DEPENDENCE OF STIMULATED RADIATION FROM ZNS SUBX,CDS SUB1-X CRYSTALS DURING TWO PHOTON EXCITATION -U-

AUTHOR-(04)-BRODIN, M.S., BUDNIK, P.I., VITRIKHOVSKIY, N.I., ZAKREVSKIY, S.V.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(3), 522-6

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ZINC SULFIDE, CADMIUM SULFIDE, LUMINESCENCE, PHONON, MIXED CRYSTAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/0989 STEP NO--UR/0449/70/004/003/0522/0526

CIRC ACCESSION NO--AP0115010

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

2/2 027 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0115010

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STIMULATED AND SPONTANEOUS LUMINESCENCE OF MIXED CRYSTALS OF ZNS (9PERCENT) AND CDS (91PERCENT) AT 4DEGREESK ARE STUDIED; ALSO, THE TEMP. DEPENDENCE OF FREQUENCY AND THE MECHANISM OF STIMULATED RADIATION IN THE 4-120DEGREESK RANGE ARE DISCUSSED. AT COMPARATIVELY LOW TEMPS. (4-66DEGREESK) LASING OF THE CRYSTAL OCCURS VIA BOUND OR RECOMBINED EXCITONS. BETWEEN 66 AND 120DEGREESK, LASING ARISES THROUGH FREE EXCITONS WITH LINEAR OPTICAL PHONON PARTICIPATION. FACILITY: INST. FIZ., KIEV, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

1/2 029 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--RESPIRATION AND DEHYDROGENASE ACTIVITY OF CANDIDA TROPICALIS IN THE PRESENCE OF FURFURAL -U-

AUTHOR-(02)-GUSAROVA, L.A., VITRINSKAYA, A.M.

COUNTRY OF INFO--USSR

SOURCE--PRIKL. BIOKHIM. MIKROBIOL. 1970, 6(2), 161-7

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--YEAST, CONTINUOUS CULTURE, FURFURAL, INHIBITION, DEHYDROGENASE, TOXICITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605001/E05 STEP NO--UR/0411/70/006/002/0161/0167

CIRC ACCESSION NO--AP0139371

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

2/2 029 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0139371

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FURFURAL (I) AT A CONCN. OF 0.1PERCENT DEPRESSES O SUB2 CONSUMPTION BY 20-30PERCENT AND PARTIALLY INHIBITS PYRUVIC, OXALACETIC, AND ESP., SUCCINIC AND MALIC DEHYDROGENASES OF C. TROPICALIS CULTIVATED IN RIEDER'S MEDIUM. THE ACTIVITY OF ALPHA-KETOGLUTARATE DEHYDROGENASE IS INCREASED IN THE PRESENCE OF I. THE TOXIC EFFECT OF THIS ADDITIVE IS MORE PRONOUNCED WHEN IT IS ADDED TO THE CULTURE MEDIUM AT THE BEGINNING OF THE LOG PHASE RATHER THAN DURING THE LAG PHASE. THUS, THE PRESENCE OF I IN SAWDUST HYDROLYZATES USED AS A NUTRIENT FOR C. TROPICALIS IS HARMFUL TO THE MICROORGANISM. FACILITY: ALL UNION RES. INST. PLANT MATER., LENINGRAD, USSR.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

USSR

UDC 669.295'27.2

SAMSONOV, G. V., CHAPLYGIN, F. I., VITRYANYUK, V. K., and ABRAMOVA, V. S., Kiev

"Physico-Mechanical Properties of Tungsten Titanate Solid Alloys With Carbon Deficit in the Lattice of the Carbide Solid Solution"

Moscow, Izvestiya Akademii Nauk USSR, Metally, No 5, Sep-Oct 72, pp 158-162

Abstract: An investigation was made of the production conditions of solid solutions of the T15K6 type based on composite carbides 0.6 $TiC_{1.0}$-0.4 WC, 0.6 $TiC_{0.8}$-0.4 WC, and 0.6 $TiC_{0.6}$-0.4 WC. The alloys, after sintering in a hydrogen medium, possess satisfactory physico-mechanical properties, but caking in vacuum results in embrittlement due to the vaporization of cobalt. A decrease in the carbon content in the composite carbide $TiC_{x \leq 1}$-WC results in increased coercivity, increased specific electric resistance, slightly increased hardness, and decreased bending strength. In alloys produced on the basis of $TiC_{0.6}$-WC composite carbide the η_1 phase is present, as in WC-Co alloys. The cutting properties of the investigated alloys in processing steel 50 are 30-40% higher than those of the standard T15K6 alloy. Four figures, two tables, eight bibliographic references.
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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

USSR

UDC 669.218-621.775

BIBINOV, S. A., DZODZIYEV, G. T., VITRYANYUK, V. K., PETRENKO, V. D., Uzbek Refractory and Heat-Resistant Metals Combine, Kiev Polytechnic Institute

"Expressed Determination of the Content of Total Carbon in Titanium Carbide"

Kiev, Poroshkovaya Metallurgiya, No 6, Jun 72, pp 102-104.

Abstract: The method for determination of the quantity of total carbon in titanium carbide suggested is based on the absorption of soft gamma-radiation by the specimen being analyzed. One of the most important specific features of this method is that the mass absorption factor for soft gamma-radiation is proportional to the fifth power of the atomic number of the absorber. The sensitivity of an experimental model of the device suggested was so great that the carbon content could be determined with an error of not over 0.15%. Three to five minutes are required for analysis. The specimens analyzed are not damaged.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

USSR

UDC: 621.762

SAMSONOV, G. V., DZODZIYEV, G. T., KLYACHKO, L. I., VITRYANYUK, V. K., Kiev Polytechnical Institute, Uzbek Refractory and Heat Resistant Metal Combine

"Effect of Molybdenum on Properties of Metal Ceramic Hard TiC-Ni Alloys"

Kiev, Poroshkovaya Metallurgiya, No 4, 1972, pp 57-60.

Abstract: A systematic study is performed of the effect of alloying TiC-Ni alloys with molybdenum over a broad concentration interval on their structure and physical-mechanical properties. It is established that the optimal properties are achieved with 20 vol. % Mo in the binder, the bending strength of the alloys varying between 105 and 180 kg/mm^2, depending on the total content of Mo, with hardnesses of from 92 to 85 HRA. As to wear resistance, the alloys with hardness with 92 HRA are two to three times superior to standard T15K6 alloy for cutting of type 50 steel.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

USSR

UDC 621.762

SAMSONOV, G. V., SERGEYEV, N. N., DZODZIYEV, G. T., VITRYANYUK, V. K., and LATYAYEVA, L. V.

"Cermet Hard Alloys Based on Titanium Carbide"

Kiev, Poroshkovaya Metallurgiya, No 9, 1971, pp 42-45

Abstract: Conditions for obtaining TiC-Ni alloys and their possible use in cutting tools are investigated. The mixture for obtaining the alloys was prepared in a mill lined with hard alloys, in an ethyl alcohol medium. The ball size was 3-5 mm. To investigate the effect of grain size of initial powders on the structure and properties of TiC-Ni alloys, the ratio of ball weight to mixture weight was taken as 6:1, 10:1, and 15:1, and the grinding time was varied from 48 to 144 hours. Short bars 5 x 5 x 35 mm in size were pressed from the mixtures obtained in the different grinding regimes. The bars were sintered in two stages: first (preliminary) centering to remove decomposition products of the plasticizing agent and for final reduction of the oxides (in dried hydrogen at 700°), and the second (final) sintering -- in a vacuum of 5 10^{-3} mm Hg at different temperatures and isothermal exposure times. It was shown that satisfactory mechanical properties (flexural strength = 107-115 kg/cm^2, and hardness -- 90-90.5 Rockwell Hardness, A-Scale) are shown by the alloy 80% TiC - 20% Ni obtained from finely pulverized mixtures

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

USSR

SAMSONOV, G. V., et al, Kiev, Poroshkovaya Metallurgiya, No 9, 1971, pp 42-45

by sintering in a vacuum of 5 10^{-3} mm Hg at 1300° and with isothermal exposure time of 30 minutes. It was found that for a 6:1 ratio of ball weight to mixture weight, even for maximum grinding time (144), following sintering the alloys exhibit porosity up to 0.4% and do not meet the requirements specified. The experimental alloys surpass the alloy T14K8 as to wear resistance by a factor of 1.6-1.8 for cutting using steel 50 at a rate of 120-180 m/min, and when used to reinforce drawing plates for wire-drawing, the wear-resistance of these alloys is superior to that of the VK6 alloy by a factor of 1.5-2.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

USSR

UDC 621.762:669-496

SAMSONOV, G. V., and VITRYANYUK, V. K.

"Production of Highly Porous Materials from the Carbides of Transition Metals"

Tugoplavk. karbidy [Refractory Carbides -- collection of works], Kiev, Nauk. dumka Press, 1970, pp. 51-57, (Translated from Referativnyy Zhurnal-Metallurgiya, No. 2, 1971, Abstract No. 2 G455 by the authors)

Translation: Conditions are studied for production of materials with 68-74% porosity and satisfactory mechanical strength. The influence of the addition of prepared carbides, Zr powder, and particle size on the strength of the finished porous products is studied. 3 figures; 1 table; 9 biblio. refs.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

CHEMISTRY

VITT, S.V.

JGas 60575 19 Jan 73

THE CHEMICAL SYNTHESIS AND APPLICATIONS OF AMINO ACIDS

[Article by Doctor of Chemical Sciences V. M. Belikova Moscow, Vestnik Akademii Nauk SSSR, Russian, No 8, August 1973, pp 32-39]

UDC: 547.466

Proteins of all organisms from the virus to man consist of 24 amino acids which on the basis of their biological value are divided into the replaceable (the organism can itself synthesize them from the construction of proteins at an adequate rate) and the irreplaceable (it cannot synthesize them and must obtain them from outside in the form of food). Each protein contains a definite quantity of each amino acid. If in a consumed protein there is none or little of any irreplaceable amino acid, the protein of the organism will not be constructed. From this arises the need for balancing of the rations, that is, the addition to low-valued proteins of the lacking amino acids, which leads to an increase of their nutrient value.

On the diagram on the following page, casein -- a nutrient part of each column corresponds to the nutrient. The cross-hatched natural protein in PEC (protein effectiveness coefficient) units. The addition of a certain quantity of lysine, the first limiting amino acid, to the product leads to a sharp increase of nutrient value, and the addition of a second limiting amino acid increases the nutrient value to the level of animal proteins.

Balancing is widely used in agriculture, especially in animal husbandry. According to the data of M. P. Tomme and F. Thachova, the inclusion of 0.2-0.5% lysine to the ration of young pigs and chicks permits reducing the consumption of fodder protein by 25% and increasing the consumption of rod- by 10-13%. Generalizing the results of research of the animals and foreign authors, S. D. Shenkakov calculated that when the production of 20,000 tons of lysine per year has been organized it is possible to obtain an additional 1.2 million tons of meat

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obtained from chloroacetic acid and ammonia or from formaldehyde, hydrocyanic acid, and ammonia. The intermediate in the synthesis is the copper complex

Complexes of copper and other transition metals are very interesting from the point of view of reactivity. The author of this article, Yu. N. Bolekon and [redacted] have investigated those reactions in detail and established the mechanism of obtaining threonine. As a result it has proven possible not only to improve the process but also to discover a new reaction of addition of glycine to the activated double bond, as a result of which glutamic acid is obtained.

The development of general methods of synthesis of amino acids from available raw material still remains a problem. The chemists are striving to find paths of synthesis which would permit obtaining as many amino acids as possible by a single scheme and from a single raw material. Such investigations are being conducted in the Institute of Heteroorganic Compounds of the AS USSR.

A. N. Nesmeyanov and R. Kh. Freydlin have proposed using the reaction of telomerization from readily available ethylene and carbon tetrachloride to obtain amino acids

where 1 - phenylalanine 2 - glutamic acid 3 - ornithine 4 - lysine

A general method of synthesis of amino acids from nitroacetic ether has been discovered by V. N. Belikov and N. K. Badzhoglyan and developed jointly with the Department of Chemistry of the Leningrad Pedagogical Institute imeni A. I. Gertsen (V. V. Perekalin). The key substance in all these syntheses is the available raw material nitromethane CH_3NO_2, which can be readily transformed into nitroacetic ether O_2NCH_2COOR. The basis of the method is the exceptional reactivity of the

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520008-9

1/2 022 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--THERMODYNAMIC PARAMETERS OF THE DISSOLUTION OF 2.5,DIMETHOXYTETRAHYDROFURAN AND 2,3,DICHLOROBUTANE ISOMERS STUDIED BY

AUTHOR-(03)-SHCHERBINA, T.M., BONDAREV, V.B., VITT, S.V.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (4), 951-3

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--THERMODYNAMIC CHARACTERISTIC, FURAN, CHLORINATED ALIPHATIC COMPOUND, BUTANE, ISOMER, GAS CHROMATOGRAPHY

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CIRC ACCESSION NO--AP0138017 PROCESSING DATE--04DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EXCESS THERMODYNAMIC PARAMETERS WERE TABULATED FOR THE PROCESS OF DISSOLUTION OF ISOMERS OF 2,5 DIMETHOXYTETRAHYDROFURAN AND 2,3 DICHLOROBUTANE ON A VARIETY OF CHROMATOGRAPHIC IMMOBILE PHASE COMPNS. FROM THE DATA ON ENTHALPY AND FREE ENERGY OF THE PROCESSES, IT WAS SUGGESTED THAT THE SPECIFICITY OF A PHASE IN VAPOR CHROMATOG. BE DEFINED OR EVALUATED BY THE DIFFERENCES IN THE CHANGE OF FREE ENERGY DELTA DELTA F IN THE INTERACTION OF THE ISOMERIC FORMS OF THE SUBSTRATE. THE VAPOR D. OF THE ISOMERS OF THE SUBSTRATE WAS DETD. DIRECTLY BY INTRODUCTION OF A SPECIMEN OF THE SUBSTANCE INTO A THERMOSTATED GLASS TUBE FILLED WITH GLASS SPHERES SO THAT THE CARRIER GAS WAS SATD. BY THE VAPOR OF THE SUBSTRATE, THEN TRANSFERRED INTO THE CALIBRATED VOLUME WHICH WAS MAINTAINED AT A SOMEWHAT HIGHER TEMP. BY TURNING THE VALVE THE SUBSTANCE WAS TRANSFERRED INTO THE CHROMATOGRAPHIC COLUMN AND THE VAPOR D. DETD. FROM PEAK AREA ON THE PLOT OF ITS EXIT FROM THE COLUMN. FACILITY: INST. ELEMENTOORG. SOEDIN, MOSCOW, USSR.

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USSR

UDC 546.72 + 547.1'3 + 547.384

DOMBROVSKIY, A. V., and VITTAL', E. E., Chernovtsy State University

"Ferrocenaldehyde and β-Ferrocenylacrolein Cyanohydrines"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 9, Sep 73, pp 1982-1983

Abstract: Ferrocenaldehyde reacts exothermally and almost instantaneously with acetonecyanohydrine in methanol and in presence of K_2CO_3 yielding crystalline ferrocenaldehyde cyanohydrine (I), m.p. 101-102°. Analogously the cyanohydrine of β-ferrocenylacrolein (II), m.p. 105-106° has been obtained from respective starting materials, the reaction being somewhat slower. IR spectral data of these products are reported. Neither (I) nor (II) could be hydrolyzed with acid or base hydrolysis.

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USSR

UDC 546.72+547.13+546.17+547.31

TASHCHUK, K. G., VITTAL', Ye. Ye., Chernovtsy State University, Chernovtsy Medical Institute

"Ammonium Salts Based on N,N-Dimethylaminomethylferrocene and Substituted Bromomethylstilbenes and Tolanes"

Ivanovo, Izvestiya Vysshykh Uchebnykh Zavedeniy -- Khimiya i Khimicheskaya Tekhnologiya, Vol 14, No 10, 1971, pp 1527-1529

Abstract: Mono- and ditertiary ammonium salts containing a ferrocene nucleus were synthesized from N,N-dimethylaminomethylferrocene and bromo derivatives of stilbene and tolane. A solution of 75 ml p-carbethoxyphenyldiazonium chloride prepared by diazotization of 16.5 g ethyl-p-aminobenzoate was added dropwise to a mixture of 12 g p-methyl- α-chlorostyrene in 80 ml acetone and 4 g $CuCl_2 \cdot 2H_2O$. After 2.5 hrs 200 ml ice water was added precipitating p-methyl-p'-carbethoxy- α-chlorostilbene (I), m.p. 52-53°. A solution of 15 g (I) in 50 ml alcohol and 8.4 g NaOH in 20 ml water was refluxed for 6 hrs, then poured into 150 ml water yielding 11 g of p-methyl-p'-carboxytolane (II), m.p. 191-192°. A mixture of 6 g (II), 7 g decyl alcohol, and 0.5 ml H_2SO_4 was heated for 5 hrs yielding 8.3 g p-methyl-p'-carbdecyloxytolane

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TASHCHUK, K. G., et al., Izvestiya Vysshykh Uchebnykh Zavedeniy -- Khimiya i Khimicheskaya Tekhnologiya, Vol 14, No 10, 1971, pp 1527-1529

(III), m.p. 59-60°. Reacting (I) and (III) with N-bromosuccinimide converted it to p-bromomethyl-p'-carbethoxy- α-chlorostilbene, m.p. 69-70°, and p-bromomethyl-p'-carbdecyloxytolane, m.p. 76-77° respectively. To a solution of 0.005 g-mole of bromomethylstilbene or tolane in 5 ml of anhydrous benzene 0.005 g-mole of N,N-dimethylaminomethylferrocene (IV) in 5 ml benzene was added dropwise yielding the monotertiary salts of title compounds; to get the ditertiary salts the amount of (IV) was increased to 0.01 g-mole; product, m.p. °C are reported; dimethyl-(ferrocenyl)-(4-styrylbenzyl)-ammonium bromide, 191-192; dimethyl-(ferrocenyl)-(4- α-chlorostyrylbenzyl) ammonium bromide, 189-190; dimethyl-(Ferrocenyl)-(4-nitro- α-chlorostyrylbenzyl)ammonium bromide, 184-185; dimethyl-(ferrocenyl)-(4-carbethoxy- α -chlorostyrylbenzyl)-4'-(carbdecyloxy)-tolane bromide, 195-196; 4,4'-bis(dimethylferrocenylmethylammoniummethyl)-stilbene dibromide, 73-75; 4,4'-bis-(dimethylferrocenylmethylammoniummethyl)- α -chlorostilbene dibromide, 98-99; 4,4'-bis-(dimethylferrocenylmethylammoniummethyl)-tolane, dibromide, 156-158.

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